



# Education in the Health-Care Setting: The Importance of Case-Based Learning

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**W**ound education is a complex and nuanced discipline. In today's educational environment, educators are challenged to support learners in systematically developing the necessary critical thinking and decision-making skills to support the delivery of patient-centred, evidence-informed care. A second challenge is bridging the "theory to practice" gap by bringing evidence alive in the clinical setting. There

are many educational strategies available to address these challenges. One such experiential learning approach that we have found effective is case-based learning.

Though the terms *problem-* and *case-based education* are often used interchangeably, there are subtle differences<sup>1</sup> (see Figure 1). Case-based learning is highlighted as an effective approach that educators can use to convey new knowledge and bridge the gap between theory and clinical practice.

## **Case-Based Learning: A Learner-Centred Approach**

Case-based learning is a learner-focused, flexible teaching strategy.<sup>2</sup> It brings meaning to real-world scenarios through learning activities that require the use of personal and co-operative experimentation (group work), problem solving, sharing and questioning in a safe learning environment. In this approach, educators play an active role as facilitator versus



didactic lecturer.<sup>3,4,5</sup> They must be flexible, creative and sensitive to learners' needs—from the intellectual, cognitive and psychological perspectives.<sup>3</sup>

Case-based learning, or the case method, has a long history of use in education and was first used in the early 1900s at Harvard Medical School and at the University of Edinburgh. In the 1960s, McMaster University-Medical College implemented a full-time curriculum using the principles of case-based and problem-based learning. Since this time, the role of case-based learning in professional education has continued to evolve in other science and professional education programs (e.g., nursing and allied health sciences).<sup>6-9</sup>

Case-based learning is centred on the application of knowledge to practical, real-life case scenarios with the goal of engaging learners in specific case-scenario discussions. Learners play an active role in the examination of real or hypothetical clinical

cases with the specific goal of transferring knowledge to the real world (theory to practice).

The strength of contextualizing cases to clinical practice is twofold. First, it helps enrich learning "by providing association that facilitates memory storage, retention and retrieval," making learning more memorable; second, it motivates and fosters new learning that is rel-

evant, practical and meaningful to the learner.<sup>1</sup> A limitation of case-based learning is that the learner may not get as comprehensive an overview of the material as would be achieved in a lecture (didactic style).<sup>1</sup>

Successful case-based learning is interactive, interdisciplinary and engaging. In small groups, learners discuss the case and problem-solve collaboratively.

**A**pplying case-based learning can be achieved by developing quality cases, having a supportive instructional design and having facilitators and teachers competent in both course content and adult learning processes. High-quality cases:

1. raise meaningful issues reflective of professional practice (set in the last five years)
2. are based in clinical practice (reality)
3. provide information to matching real situations
4. require mental activities and processes
5. arouse the learners' curiosity and support the experience of a need-to-know
6. call for a higher-order thinking by using prior knowledge
7. probe the learners' understanding of the issues<sup>15,17</sup>



Learners begin the group discussion with what they already know about the case topic and bring forward knowledge from pre-readings and prior clinical practice to enrich the discussion. This progression gives learners an opportunity to challenge what they already know and demonstrate how to consider and use new knowledge in clinical practice.

### Facilitators' Role

The educator or case facilitator has an active role in case-based education, which may occur

as a one-on-one role with a learner or in small groups. This active role is necessary for the success of case-based education. Through active facilitation, learners in small groups are supported in discussing the case and deciding how to transfer prior or new knowledge to the clinical setting. The learning shifts from the teacher as expert to the learner as expert. Knowledgeable and competent facilitators are essential for offering effective group support and instruction to the groups through questioning, challenging and engaging learners.<sup>10-14</sup>

### Principles for Developing Cases

For educators, one of the challenges in case-based learning is the time and effort it takes to develop relevant, interactive cases.<sup>1</sup> High-quality cases reflect the real-world environment and should reflect the knowledge and skills that the learners will use in the clinical setting. Educators developing cases should:

1. contextualize the cases to the learners' environment so they are relevant
2. develop cases that capture

**Figure 1:** Comparing Case-based and Problem-based Educational Approaches

Case-based Education	Problem-based Education
Definition	
Learner-focused, flexible teaching strategy, <sup>2</sup> where learners construct new learning and meaning through problem-solving, co-operative group work and experiential sharing.	Involves studying the complex client problem before the theory is reviewed, bringing learners together to critically think, problem-solve and engage in self-directed study. <sup>1</sup>
Learner's Role	
<ul style="list-style-type: none"> <li>• prior reading required</li> <li>• problem or clinical cases are presented in a structured format</li> <li>• learners (small group) seek outside information and sources</li> <li>• brainstorming to actively explore case</li> <li>• case discussion with integration of prior and new knowledge</li> <li>• group discussion and conclusion</li> <li>• focuses on clinical skills</li> </ul>	<ul style="list-style-type: none"> <li>• prior reading not provided</li> <li>• clinical cases presented</li> <li>• specific tests, investigations, laboratory values</li> <li>• self-directed learning</li> <li>• group discussion and conclusion</li> <li>• conclusion may not be correct and may need further investigation</li> <li>• focus on problem-solving and self-directed learning</li> </ul>
Facilitator's Role	
<ul style="list-style-type: none"> <li>• facilitator has advance preparation</li> <li>• facilitator's role is active in leading learner toward objectives</li> <li>• gives feedback</li> <li>• provides probing questions to further discussion</li> <li>• moderates discussion, correcting errant statements and helping to explain difficult concepts</li> </ul>	<ul style="list-style-type: none"> <li>• facilitator has advance preparation</li> <li>• facilitator's role is passive</li> <li>• does not guide discussion even when learners explore possibilities</li> </ul>





the central learning points that then become the central hub of the learning activities and discussion

3. develop cases that challenge the learner cognitively and conceptually

Several researchers have developed basic principles to support the development of cases (see sidebar on p. 23).<sup>15–17</sup>

## Summary

The importance of relevant, timely and practical wound care education cannot be overstated.

We have found that case-based learning is a valuable approach to convey new knowledge in a relevant and real-world context. If you are an educator, we recommend that you consider case-based learning because when it is offered in a collaborative interdisciplinary venue, learners are able to identify the practical applications of their new understandings to clinical practice. 🙌

## References

1. Allchin D. Problem- and case-based learning in science: An introduction

to distinction, values, and outcomes. *CBE Life Sciences Education*. 2013;12(3):364–72. Retrieved from [www.ncbi.nlm.nih.gov/pmc/articles/PMC3763004/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3763004/).

2. University of Saskatchewan. Case-based learning. 2016. Retrieved from [www.usask.ca/gmcte/case-based](http://www.usask.ca/gmcte/case-based).
3. Simonson M, Smaldino S, Albright M, Zacek S. *Teaching and Learning at a Distance: Foundations of Distance Education*. 5th ed. Boston: Pearson; 2012.
4. Svinicki MD, McKeachie WJ. *McKeachie's Teaching Tips: Strategies, Research, and Theory for College and University Teachers*. 14th ed. Aus: Wadsworth CenGage Learning; 2014.
5. Levin RF. *Integrating Evidence-based Practice with Educational Theory in Clinical Practice for Nurse*

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- Practitioners: Bridging the Theory Practice Gap. New York: Springer Publishing Company; 2010.
6. Slavin SJ, Wilkes MS, Usatine R. Doctoring III: Innovations in education in the clinical years. Academic Medicine. 1995;70(12):1091–5.
  7. Srinivasan M, Wilkes M, Stevenson F, Nguyen T, Slavin S. Comparing problem-based learning with case-based learning: Effects of a major curricular shift at two institutions. Academic Medicine. 2007;82(1):74–82.
  8. Thistlethwaite JE, Davies D, Ekeocha S, Kidd JM, Macdougall C, Matthew P, Clay D. The effectiveness of case-based learning in health professional education: A BEME systematic review: BEME Guide No. 23. Medical Teacher. 2012;34(6):e421–e444.
  9. Thomas M, O'Connor F, Albert M, Boutain D, Brandt P. Case-based teaching and learning experiences. Issues in Mental Health Nursing 2001;5:517–31. Accessed February 11, 2015.
  10. Bradshaw MJ, Lowenstein AJ, editors. Innovative Teaching Strategies in Nursing and Related Health Professions. 5th ed. Sudbury: Jones & Bartlett Publishers; 2011.
  11. Ha H, Lopez T. Developing health literacy knowledge and skills through case-based learning. Am J Pharm Educ. 2014;78(1):1–17. Retrieved from [www.ncbi.nlm.nih.gov/pmc/articles/PMC3930241/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3930241/).
  12. McMaster University. Teaching and Learning Resources: Case-based Learning. 2015. Retrieved from [cml.mcmaster.ca/resources/C/Case\\_Based\\_Learning.html](http://cml.mcmaster.ca/resources/C/Case_Based_Learning.html) Accessed March 18, 2016.
  13. Merseth K. (1991). The early history of case-based instruction: Insights for teacher education today. Journal of Teacher Education. 1991;42(4):243–9.
  14. Queens' University. What is case-based learning? Retrieved from [www.queensu.ca/ctl/what-we-do/teaching-and-assessment-strategies/case-based-learning](http://www.queensu.ca/ctl/what-we-do/teaching-and-assessment-strategies/case-based-learning). Accessed March 18, 2016.
  15. Ramackers S, van Keulen H, Kremer W, Pilot A, van Buekelen P. Effective teaching in case-based education: Patterns in teacher behavior and their impact on the students' clinical problem solving and learnings. International Journal of Teaching and Learning in Higher Education. 2011;23(3):303–13.
  16. Jin J, Bridges SM. Educational technologies in problem-based learning in health sciences education: A systematic review. J Med Internet Res. 2014;16(12):e25.
  17. Herreid C. Case study teaching. New directions for teaching and learning 2011;128:31–40. Accessed February 2, 2015.

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